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Yoshiaki Sakagami

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/814,343
Filing Date: April 01, 2004
Appellant(s): SAKAGAMI ET AL.

Alicia Choi
(Reg. #: 46,621)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/3/2009 appealing from the Office action mailed 10/30/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5802494	KUNO	9-1998
6278904	ISHII	8-2001

Higaki et al., Pub. No: US 2004/0028260 A1, Pub. Date: 2/12/2004

Onaka, Shinichi, JP 2000326274 A, Pub. Date: 11/28/2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higaki et. al. (US 2004/0028260 A1), in view of Kuno (5,802,494).

In Regards to Claim 1:

Higaki discloses an image transmission system for a mobile robot, comprising:
a camera for capturing an image as an image signal (“employing 2-color CCDs, with L and R denoting the left side camera and the right side camera respectively”, Higaki, paragraph 41; Higaki, Figure 1, 1L and 1R).

a microphone for capturing sound as a sound signal (“reference symbol 21 denotes a microphone that picks up the voice of a person speaking”, Higaki, paragraph 41; Higaki, Figure 1, 21)

human detecting means for detecting a human from the captured image and/or sound (“characteristic features such as the face and the hands of a person can be detected from the extracted outline information”, Higaki, paragraph 13 and “voice recognition section which recognizes the content of the utterance picked up by the microphone”, Higaki, paragraph 41).

a power drive unit for moving the entire robot toward the detected human (“a drive control section”, Higaki, paragraph 41; Higaki, Figure 1, 9);

an image cut out means for cutting out an image of the detected human

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according to information from the camera (“reference symbol 54 denotes an outline extraction section which extracts an outline”; Higaki, Figure 1, 54) ; and

wherein the human detecting means comprises:

means for detecting a moving object as a human from the image signal

obtained from the camera (Higaki, Fig.1, num. 58 and 59);

means for extracting an outline of the moving object (Higaki, Fig. 1, num. 54);

means for extracting a face inside the outline of the moving object (Higaki, Fig. 6, S33);

means for detecting a position of a hand by searching for a skin color area

other than the face inside the outline of the moving object (Higaki, Fig. 6, S35);

means for recognizing a gesture and/or posture of a human based on a

positional relationship between the face and the hand (Higaki, Fig 6, S36 based on positional information gleaned from S33 and S35); and

means for detecting a human according to the gesture and/or posture (“Reference

symbol 71 denotes a setting file in which the relationships between human postures and corresponding instructions are pre-defined. Reference symbol 72 denotes a face

database in which human facial recognition information is predefined. Reference symbol

8 denotes a memory which stores the data necessary for posture recognition.”, Higaki,

paragraph 41).

Higaki does not disclose an image transmitting means for transmitting a human image to an external terminal.

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Kuno (5,802,494) teaches an image transmitting means for transmitting a human image to an external terminal (“and the signals showing the subject’s image are transmitted to a CRT display installed in a monitor room”, column 1, lines 60-62, “the image of the subject’s head is extracted from the input image (Figure 11A)”, column 9, lines 43-44)

It would have been obvious at the time of the invention to a person of ordinary skill in the art to combine the image transmission system for a mobile robot with the elements as disclosed by Higaki with an image transmitting means for transmitting a human image to an external terminal taught by Kuno in order to monitor an individual from a remote location (“The CRT display displays the image of the subject, whereby a physician in the monitor room can observe the subject”, Kuno, column 1, lines 22-24)

Claims 2, 4, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Higaki et. al. (US 2004/0028260 A1) and Kuno (5,802,494) as applied to claim 1.

Regarding claim 2, the combination of Higaki and Kuno teaches an image transmission system according to claim 1, wherein the system is adapted to determine that the moving object is a human from color information of the moving object (“make an area inside the outline having a predetermined color a candidate for a hand of a

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person”, paragraph 17, “denotes a face recognition section which recognizes a person’s face from the color image, the skin-color area image”, paragraph 19)

Regarding claim 4, the combination of Higaki and Kuno discloses an image transmission system according to claim 1, further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image (FIG. 28 is a diagram illustrating how to determine the position of the robot, column 3, lines 16-17, “The physician looks at the subject's face being displayed on the display of the monitor console and also checks the physical conditions being displayed on the other displays of the console, in order to decide what he or she should do for the subject.”, column 5, lines 26-30, “the circuit 40 starts transmitting the image data representing the image of the subject, to the monitor section 2”, column 5, lines 14-16, “Meanwhile, the electronics sensors 33 installed in the sickroom, such as the hemodynamometer and the electrocardiograph, both attached to the subject, output diagnosis signals, representing the physical conditions of the subject. The video signals and the diagnosis signals are input to the signal processor 32 incorporated in the data-processing/control section 4. The processor 32 processes these input signals, thereby generating image data and diagnosis data. The image data and the diagnosis data are supplied to the abnormality decision circuit 34 incorporated in the robot 5.”, Kuno, column 5, lines 10-20)

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Regarding claim 5, the combination of Higaki and Kuno discloses an image transmission system according to claim 1, wherein the system is adapted to have the robot direct the camera toward the position of the detected human (“obtains the pan angle and tilt angle of the cameras 1L and 1R (step S81). The line of sight instruction section sends the obtained pan angle and the tilt angle to the action control section 9 (step S82). As a result, the cameras 1L and 1R always come to face the direction of the head of the person who issues the instruction “come”, it becomes possible to track the person”, Higaki, paragraph 94)

Regarding claim 6, the combination of Higaki and Kuno discloses an image transmission system according to claim 1, wherein the system further comprises means for measuring a distance to the detected human according to the information from the camera, and providing a target of a movement to said mobile robot (“a distance calculation device that calculates a distance to the body being the candidate, from distance information of each pixel within the outline in the image”, paragraph 12 and “the movement instruction section 64, based on the moving object data 90, tracks the person who instructed “come” (step S95)”, Higaki, paragraph 95).

Regarding claim 7, the combination of Higaki and Kuno discloses an image transmission system according to claim 1, wherein the image cut out means cuts out a portion of the image so that the portion of the image includes an image of the detected human, and the image transmitting means transmits only the cut out portion of the

image to the external terminal (“and the signals showing the subject’s image are transmitted to a CRT display installed in a monitor room”, Kuno, column 1, lines 60-62, “the image of the subject’s head is extracted from the input image (Figure 11A)”, Kuno, column 9, lines 43-44).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Higaki et. al. (US 2004/0028260 A1) and Kuno (5,802,494) as applied to claim 1 above, and further in view of Shinichi (2000-326274).

In Regards to Claim 3:

While the Higaki Kuno combination discloses a microphone as described above, the Higaki and Kuno combination does not teach determining a direction of a sound source from the sound signal obtained from the microphone.

However, Shinichi does teach a system, in the same problem solving area of locating a source of sound, that detects the direction of a sound source (“direction of a sound source is detected”, paragraph 5).

It would have been obvious at the time of the invention to a person of ordinary skill in the art to combine the image transmission system for a mobile robot with the elements as disclosed by Higaki and Kuno in the claim 1 discussion above with a system as

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taught by Shinichi that is adapted to determine a direction of a sound source from the sound signal obtained from the microphone because this directional information provided by the sound signal allows the robot an additional way to be able to locate the person (“turned the robot in this direction” paragraph 5 of Shinichi and “person retrieval processing” paragraph 5 of Shinichi).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Higaki et. al. (US 2004/0028260 A1) and Kuno (5,467,403) as applied to claim 1 above, and further in view of Ishii (6,278,904).

In Regards to Claim 4:

Higaki, as part of the Higaki and Kuno combination applied to claim 1 above, teaches means for monitoring state variables (“the person information map 10 defines the relative position between the person and the autonomous relative position between the person and the autonomous robot R, in order to grasp where the person issuing instructions currently is. The person information map 110 includes: an individual person ID 111 for uniquely specifying persons, a relative position to self 112, a face object ID 113, and individual person ID 114, a posture ID 115, a moving object ID 116, a face position coordinate 118 in the real space, a hand position coordinate 119, a distance to self 120, a relative angle to self 121, an outline contact point coordinate 122, and a head vertex point coordinate 123”, paragraph 87, “the operation for renewing the person information map in the object integration section 62 is described with reference to

Figure 15”, paragraph 88 and “the operation for renewing the person information map in the object integration section 62 is described with reference to Figure 15”, paragraph 88).

Higaki does not disclose an image transmitting means transmitting the monitored state variable including current position of the robot.

Ishii does disclose an image transmitting means transmitting the monitored state variables including the current position of the robot (“In the first embodiment, the information captured through the image sensor 11 and the audio sensor 12 is used for the purpose of detecting a current position of the robot 10 in order for the robot 10 to move around all objects to be monitored or to monitor a specified object. The information captured through the image sensor 11 and the audio sensor 12 is also stored in the robot 10, or transferred externally through the communications device 19 and stored in an external device, as the monitoring data”, column 5, lines 10-15).

It would have been obvious at the time of the invention to a person of ordinary skill in the art to combine the image transmission system for a mobile robot with the elements as disclosed by Higaki and Kuno in the claim 1 discussion above with an image transmitting means transmitting the monitored state variables including current position of the robot as taught by Ishii, in order to be able to observe a predetermined object and keep track of its location and other state variables of interest (“detecting a current

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position of the robot 10 in order for the robot to move around all objects to be monitored or to monitor a specified object” and “the information captured through the image sensor 11 and the audio sensor 12 is also stored in the robot 10, or transferred externally through the communications device 19 and stored in an external device, as the monitoring data”, Ishii, column 5, lines 10-15).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Higaki et. al. (US 2004/0028260 A1) and Kuno (5,467,403) as applied to claim 7.

Regarding claim 8, the combination of Higaki and Kuno discloses an image transmission system according to claim 7, wherein the image cut out means cuts out the portion of the captured image so that the portion of the image includes a face image of the detected human wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image (“and the signals showing the subject’s image are transmitted to a CRT display installed in a monitor room”, column 1, lines 60-62, “the image of the subject’s head is extracted from the input image (Figure 11A)”, column 9, lines 43-44).

(10) Response to Argument

The examiner respectfully disagrees that the rejection should be reversed. Only those actual arguments raised by Appellant's are being treated in the Examiner's Answer. Any further arguments regarding other elements or limitation not specifically argued that the

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appellant could have made are considered by the examiner as having been conceded by the appellant for the basis of the decision of this appeal. Accordingly, they are not being addressed by the examiner for further consideration by the panel. Each of the remarks and or arguments filed with the appeal brief has been considered. A complete response to those arguments is listed here below:

Applicant's Argument:

As provided in the Declaration under 37 CFR § 1.131 submitted with the Response filed on January 7, 2008 and the Declaration under 37 CFR § 1.131 submitted with the Response filed on July 8, 2008, the subject matter of the present application corresponds to the subject matter described in Japanese patent application No. 2003-094171 filed on March 31, 2003 in Japan, a WTO member country. The Appellants had the intent to file the U.S. Patent application and claim priority rights under the Paris Convention under 35 U.S.C. § 119(a) as evidenced by a first order letter to Oshima & Narushima of January 8, 2004. A copy of the first order letter was attached to the Declaration under 37 CFR § 1.131 filed on January 7, 2008.

On March 4, 2004, an order letter was sent from Oshima & Narushima to the law firm of Squire Sanders & Dempsey LLP, instructing Squire Sanders & Dempsey to prepare and file the application in the United States by March 31, 2004, claiming benefit of the Japanese priority filing date. However, this letter was contained in a package containing several filing orders which had been sent to Squire Sanders & Dempsey, and it was not until April 1, 2004, that this application was noticed among the several patent applications. In the normal course, the order letter was erroneously placed with another application that was in the package. Immediately upon discovery of the clerical error, the subject U.S. application was immediately filed on April 1, 2004. There was a clerical error

that resulted in the application being filed one day late. A clerical error resulting in a one-day delay is no evidence of a lack of diligence.

Higaki was filed on August 7, 2003, and published on February 12, 2004. The filing of Japanese Patent Application No. 2003-094171 on March 31, 2003, clearly establishes conception of the invention prior to the effective date of Higaki. Diligence was exercised from prior to the effective date of Higaki until the filing date of the present application on April 1, 2004. A mistake in failing to identify the order letter in a stack of paper for a short period of time does not constitute evidence of a lack of diligence. Quite to the contrary, the filing of the application in Japan, the order letters from the Appellants to their Japanese attorney, the order letter from the Japanese attorney to the U.S. attorney, and the actual filing of the application effectively show that Appellants intended to claim the benefit of the earlier filing date under 35 USC § 119(a), and acted diligently to file the U.S. patent application.

In the Office Action, it was contended that the Declaration filed on July 8, 2008 was ineffective to overcome Higaki because the Appellants failed to show due diligence. However, Appellants respectfully submit that missing of the Paris Convention deadline by one day is not evidence of due diligence. This is evidence of a clerical error. Appellants are not asserting a claim for priority in the Declaration of January 7, 2008, the Declaration of July 8, 2008, or in this Appeal. Appellants presented the Declarations and the Responses in an effort to show that Appellants acted diligently to reduce the invention to practice through the filing of a United States patent application based upon Japanese Patent Application No. 2003-094171. The missing of the priority deadline by one day is not evidence of a lack of diligence. The attempt in the Office Action to connect the Paris Convention deadline to due diligence is a clear legal and factual error.

Under U.S. patent practice, a patentee must account for the entire critical period between the date of conception and the date of reduction to practice by showing either activity aimed at reduction to practice or legally adequate excuses for inactivity. The order letters to the Japanese and U.S. attorneys, and the filing date of April 1, 2004, is clearly evidence of due diligence. The commission of a clerical error does not "undo" all of the diligence which took place.

Furthermore, Appellants respectfully submit that the difference between conception/due diligence and a claim for priority has been confused. The cases that are relied upon in the Office Action to formulate the conclusion that due diligence was not shown are cases in which the applicant did not show any intent to seek patent protection and did not demonstrate continuous activities in the development of the invention from conception to the reduction of the invention to practice (e.g., filing of an application).

In the Responses filed on January 7, 2008 and July 8, 2008, Appellants clearly set forth that a claim for priority was not being asserted. Rather, Appellants were clearly submitting that the filing of the application in Japan, the order letter from the Appellants requesting that a U.S. Paris Convention application be filed, and the actual filing of the application at the USPTO, effectively show that the Appellants acted diligently to reduce the invention to practice. Therefore, the filing of Japanese Patent Application No. 2003-094171 corresponding to the present application, establishes conception of the invention prior to the effective date of Higaki, coupled with diligence from prior to the effective date of Higaki until the filing date (constructive reduction to practice) of U.S. Patent Application Serial No. 10/814,343.

Appellants respectfully provide that in order to show due diligence in the inventor's reduction to practice, "the patentee must account for the entire critical period between the

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date of conception and the date of reduction to practice by showing either activity aimed at reduction to practice or legally adequate excuses for inactivity." 3 D. Chisum, Patents § 10.07 (1987). "In addition, the law requires corroboration of diligence during the critical period." *American Standard Inc. v. Pfizer, Inc.*, 722 F. Supp. 86, 109 (D.Del. 1989). The "critical period" of diligence is "from the time just before the entry of a second inventor into the field until a reduction to practice." *American Standard Inc.*, 722 F. Supp. at 114; *Driscoll v. Cebalo*, 5 U.S.P.Q.2d 1477, 1481 n. 6 (P.T.O. 1982). Furthermore, "the law requires corroboration of diligence during the critical period." *American Standard Inc.*, 722 F. Supp. at 109.

Matters which may be properly considered in reaching a conclusion as to whether an applicant for a patent has exercised reasonable diligence in filing his application where delay has occurred were stated to the following effect by the Court of Appeals for the District of Columbia in the case of *Callaghan v. Couverneur et al.*, 54 App.D.C. 140,143, 295 F. 961,964: 'It has been held in cases of this character that there is no arbitrary rule or standard by which diligence may be measured, but each case must be considered and decided in the light of the circumstances of that case; also, that the nature of the invention, the situation of the inventor, the length of time intervening between conception and reduction to practice, the character and reasonableness of the inventor's testimony and that of his witnesses, are all important factors in determining the question of diligence. *Woods v. Poor*, 29 D.C.App. 397; *Sargent v. Vetter*, 48 App.D.C. 582. It has been said that such diligence does not require uninterrupted effort, nor the concentration of all the applicant's energies upon the single enterprise; that the health, the means, the liberty of the inventor are proper subjects for consideration in this regard; and that the law looks with indulgence upon the delays which arise from the circumstances of parties who may make an invention. *Dickinson v. Swinehart*, 49 App.D.C. 222, (263 F. 474); *Courson*

v. O'Connor, 227 F. 890, 142 C.C.A. 414; Robinson on Patents, vol. 1, p. 547.'

Appellants respectfully disagree with the Examiner's interpretation of the facts included in the Declaration filed on January 7, 2008 and in the Declaration filed on July 8, 2008. Appellants respectfully submit that the holding of the previously cited cases clearly support a finding that, the filing of Japanese Patent Application No. 2003-094171 corresponding to the present application establish conception of the invention prior to the effective date of Higaki coupled with diligence from prior the effective date of Higaki until the filing date (constructive reduction to practice) of U.S. Patent Application Serial No. 10/814,343. Also, the Office Action failed to appreciate the differences between a claim for priority and first to conceive and reduce to practice coupled with due diligence.

Accordingly, Appellants respectfully request that Higaki be excluded from being used to reject the present application. Because the rejections cannot stand without Higaki, it is respectfully requested that the rejections be withdrawn.

For the reasons explained above, it is respectfully submitted that the rejection of claim 1 is moot because Higaki may not be used as prior art against the present application and because Kuno fails to teach or suggest all the recitations of independent claim 1.

Examiner's Answer to Section VII.A:

The Declaration filed on July 4, 2008 under 37 CFR 1.131 has been considered but is ineffective to overcome the Higaki reference (2004/0028260 A1). Applicant failed to show due diligence in waiting until March 4, 2004, with less than a month available, to initiate the filing of a US equivalent filing as shown by the order letter of March 4, 2004 that was sent from Oshima & Narushima to the law firm of Squire Sanders & Dempsey LLP, instructing Squire Sanders & Dempsey to prepare and file the application in the

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United States. There appears to be a lack of diligence between the conception and the order letter from Oshima & Narushima, with the period between the two and the reason such a long delay unaccounted for. Applicant merely asserts exercising due diligence in the Declaration under 37 CFR 1.131 filed on July 4, 2008. However, as stated in the MPEP 715.07(a), "where conception occurs prior to the date of the reference but , but reduction to practice is afterward, it is not enough merely to allege that applicant or patent owner had been diligent Ex parte Hunter, 1189 C.D. 218, 49 O.G. 733 (Comm'r Pat. 1889). Rather, applicant must show evidence of facts establishing diligence."

A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter. In this case, the U.S. filing date was April 1st, 2004, one day after the one year period.

Specifically, foreign priority application JP 2003-094166 was filed in Japan on 3/31/03, and the corresponding U.S. application was filed on 4/1/04. Given that one year from 3/31/03 is 3/31/04, and that 3/31/04 was a Wednesday, and not a federal holiday, the period for claiming foreign priority expired.

The Declaration filed on July 4, 2008 under 37 CFR 1.131 has been received, but fails to remedy the 1-day discrepancy of the U.S. filing date. Thus, the Declaration has been made of record, but does not serve to antedate any intervening references.

Neither of these documents remedy the lapse in time, and therefore the Higaki

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reference (2004/0028260 A1) applied by the examiner in the previous Office Actions remains valid prior art under 35 U.S.C. 102(e).

Applicant's Argument:

Specifically, Kuno does not teach or suggest, at least, "a power drive unit for moving the entire robot toward the detected human," as recited in independent claim 1. Rather, from the description and figures provided in Kuno, a robot 5 is positioned in front of or next to the patient so the facial features may be detected and monitored. Column 24, from line 6, of Kuno describes that the robot 5 can move its arms and hands, touching the bed or the subject. Nothing in column 24 provides that the robot 5 has a driving mechanism to move the entire robot toward the detected human. The robot 5 of Kuno must be manually placed by a human in front of the patient.

Examiner's Answer:

Higaki, not Kuno, is relied upon for teaching "a power drive unit for moving the entire robot toward the detected human," as recited in independent claim 1. Please see the rejection above.

Applicant's Argument:

Furthermore, in step c1 of Kuno, pixels which may represent part of the subject's head are extracted. See column 8, lines 17-26. In other words, the pixels are distinguished from those representing the pillow, bed sheet and blanket. If the video

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camera 31a incorporated in the robot 5 is a color camera, the pixels of skin color and hair color are extracted from the pixels of other colors. If the camera 31a is a monochrome one, the pixels showing part of the **subject's head are distinguished** from those representing the bedding, in accordance with the brightness or texture of pixels.

(Emphasis added) Therefore, Kuno processes the pixels of skin color and hair to be able to distinguish the patient's head, not to detect the position of the patient's hand.

Specifically, Kuno fails to teach or suggest, at least, "means for detecting a **position of** a hand by searching for a skin color area **other than the face** inside the outline of the moving object," emphasis added, as recited in independent claim 1. Based "on a 1-9) and is demonstrating an abnormal feature (See column 14, lines 24-39). Therefore, the description of Kuno cannot be used to teach all of the features recited in independent claim 1.

Accordingly, it is respectfully asserted that Kuno fails to teach or suggest all the recitations of independent claim 1. It is respectfully requested that the rejection to the claims be withdrawn.

As such, Appellant respectfully requests that the rejection of claim 1 be reversed and the claim be allowed.

Examiner's Answer:

Higaki, not Kuno, is relied upon for teaching "means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object." Please see the Office Action above.

Applicant's Argument:

Claim 2 depends from claim 1 and further limits claim 1. Furthermore, claim 2 recites, "wherein the system is adapted to determine that the moving object is a human from color information of the moving object." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 2 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

Applicant's Argument:

Claim 4 depends from claim 1 and further limits claim 1. Furthermore, claim 4 recites, "further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state

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variables in addition to the cut out human image." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 4 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 4 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

Applicant's Argument:

Claim 5 depends from claim 1 and further limits claim 1. Furthermore, claim 5 recites, "wherein the system is adapted to have the robot direct the camera toward the position of the detected human." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR§ 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 6 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

Applicant's Argument:

Claim 6 depends from claim 1 and further limits claim 1. Furthermore, claim 6 recites, "wherein the system further comprises means for measuring a distance to the detected human according to the information from the camera, and providing a target of a movement to said mobile robot." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 6 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 6 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

Applicant's Argument:

Claim 7 depends from claim 1 and further limits claim 1. Furthermore, claim 7 recites, "wherein the image cut out means cuts out a portion of the image so that the portion of the image includes an image of the detected human, and the image transmitting means transmits only the cut out portion of the image to the external terminal." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 7 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 7 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

Applicant's Argument:

C. Claim 3 is novel in view of Higaki and Kuno and further in view of Shinichi

Claim 3 depends from claim 1 and further limits claim 1. Furthermore, claim 3 recites, "wherein the system is adapted to determine a direction of a sound source from the sound signal obtained from the microphone." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any

intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 3 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declarations under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application.

Shinichi generally describes an acting robot in which an image input device 1 inputs an image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. The man detecting device 2 detects a man by image processing, and extracts a face area of the man to follow up the face area thereafter. A man distinguishing device refers the information on an image of the man stored in a man information storing part 5, and a voice input device 6 consists of three microphones attached to a body, and outputs the inputs to a voice source direction detecting device 7. An obstacle detecting device 10 calculates a distance value to an obstacle of every ultrasonic wave sensor 9 and holds the same, and a touch sensor 11 distinguishes a rubbed state and a tapped state and outputs the same.

However, Shinichi does not cure the deficiencies of Kuno. Similarly to Kuno, Shinichi does not teach or suggest, at least "a power drive unit for moving the entire robot toward the detected human," as recited in independent claim 1. Rather, from the description and figures provided in Shinichi, the image input device 1 inputs the image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. Similarly to Kuno, there is no description or suggestion in Shinichi that a position of a hand is detected "by searching for a skin color area other than the face inside the outline of the moving object," as recited in independent claim 1 and that a gesture and/or posture of a human is recognized "based

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on a positional relationship between the face and the hand," as also recited in independent claim 1.

Accordingly, it is respectfully asserted that Kuno and Shinichi fail to teach or suggest all the recitations of independent claim 1 and related dependent claim 3. It is respectfully requested that the rejection to the claim be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference. Higaki, not Kuno or Shinichi, is relied upon to teach, at least "a power drive unit for moving the entire robot toward the detected human" or "means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object" or "means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand; and means for detecting a human according to the gesture and/or posture," as recited in independent claim 1. Please see the Office Action above.

Applicant's Argument:

D. Claim 4 is novel in view of Higaki and Kuno **and further** in view of Ishii

Claim 4 depends from claim 1 and further limits claim 1. Furthermore, claim 4 recites, "further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image." Because the combination of Higaki and Kuno must

teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 4 over Kuno are incorporated herein.

Also, for the reasons previously submitted in the Declarations under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application.

Ishii generally describes floating device, which allows an entire robot main body to float at a site. Mounted on the floating device are an image sensor which captures image data of persons around the robot main body. An information processing device recognizes a specified person based on the image data captured by the image sensor, calculates a position of the specified person, and outputs a control signal for moving the robot main body toward the position of the specified person.

However, Ishii is silent on how the position of a hand of the specified person is determined. Specifically, Ishii fails to teach or suggest, at least, "means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object," as recited in independent claim 1. Similarly to Kuno, Ishii is devoid of any teaching or suggestion providing the features associated with the means for detecting as recited in independent claim 1. The floating robot 10 of Ishii does not teach or suggest detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object. As a result, similarly to Kuno, a person of ordinary skill in the art will appreciate that Ishii is silent as to teaching or suggesting, "means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand; and means for detecting a human according to the gesture and/or posture," as recited in independent claim 1.

Furthermore, contrary to the contentions made in the Office Action, in view of the descriptions of Kuno, a person of ordinary skill in the art would not be motivated to combine the floating device of Ishii with Kuno.

MPEP 2143.01(V) states "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE," (Capital letters in original.) and explains that "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Moreover, MPEP 2145(111) states that "the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose." The proposed combination of Kuno and Ishii would change the fundamental principles of Kuno's operation, and, thus, is per se non-obvious under MPEP 2143.01(V).

It is evident that Kuno's patient monitoring system could not be configured to add a mechanism allowing a patient to float in the water and having an entire main body to float at a side as provided in Ishii. Accordingly, the proposed combination is improper, unmotivated hindsight reconstruction.

Accordingly, Appellants respectfully request that the rejection of claim 4 be reversed because the combination of Kuno and Ishii does not teach or suggest all the features of independent claim 1 and related dependent claim 4 and is per se non-obvious and because there is no proper motivation to combine the references and, thus, a prima facie case of obviousness has not been established.

Examiner's Answer:

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Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference. Higaki, not Kuno or Ishii, is relied upon for teaching "means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object" or "means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand; and means for detecting a human according to the gesture and/or posture," as recited in independent claim 1.

Please see the Office Action above. Applicant's suggestion that Ishii is not combinable with Kuno and Higaki because "Kuno's patient monitoring system could not be configured to add a mechanism allowing a patient to float in the water and having an entire main body to float at a side as provided in Ishii" does not make sense to the Examiner. As shown in column 6, lines 48 to column 7, lines 10 of the Ishii reference, "the second embodiment can be purposely applied as a modification to the utilization in a home for aged or a hospital. In this case, the same device structure as that for family use can be used. The design is varied depending on the purpose. In the home for aged or the hospital, it is necessary for the administrator to recognize the states of residents or patients, but installing a camera or the like will cause a privacy problem. The regular patrol by a nurse or an employee has a problem that there will be considerable increase in the human cost and labor. By allowing the floating type robot 20 according to the second embodiment to conduct such patrol, the human cost and labor can be reduced. Since the floating type robot 20 conducts the patrol at a certain periodical interval, the patient and the aged person can distinguish whether or not they are watched. Further, even if the robot 20 comes to watch one of them, the person can instruct the robot 20 to

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go to another subsequent person without doing anything. Accordingly, the privacy problem is less likely to occur. The various sensors and the information display, and the information processing device equipped in the floating type robot 20 can realize these functions by conducting the information transmission to and from the user similarly to the example of the family use. In the indoor use, particularly the family use, the robot according to the second embodiment of the present invention may be modified to have, as, the moving means, wheels, legs or rails for moving on the floor surface, a wall surface or a ceiling in place of the floating device 28 and the propulsion device 27. Further, to achieve the same purpose with the robot placed on the water surface or in the water, the robot may be provided with means for moving on the water surface, in the water, on the surface of other liquid or in the other liquid." It is obvious from this excerpt that Higaki, Kuno and Ishii are combinable.

Applicant's Argument:

E. Claim 8 is novel in view of Higaki and Kuno

Claim 8 depends from claim 1 and further limits claim 1. Furthermore, claim 8 recites, "wherein the image cut out means cuts out the portion of the captured image so that the portion of the image includes a face image of the detected human wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims

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of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 8 be reversed.

Examiner's Answer:

Please see the first Examiner's Answer presented above in response to Section VII.A and the arguments presented therein regarding the validity of the Higaki reference.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

/Elisa M Rice/

Examiner, Art Unit 2624

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/VIKKRAM BALI/

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